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THOMAS G. NEWMAN, EDITOR.

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EDITORIAL

Of the Eighteen Different Kinds of North Brazilian honey-bees known to the naturalist, only three possess a sting.

Bulletin No. 11, of the Michigan Agricultural College, is received, and the subject matter is "Making a Lawn," by Prof. W. J. Beal.

Nelson Perkins, formerly of Minnesota, but later of Alabama, died in the latter State very suddenly of a lung difficulty on the 10th inst., and was buried on the 11th inst. He was an experienced apiarist and an earnest Christian, and will be missed by his many companions.

Bees in the Cellar should be left there for some time yet, or until they get uneasy, by reason of warm weather. If put out too soon a cold snap will be very disastrous, for many of the bees are old and have but little vitality. If they go out they soon become chilled and never return to the hive.

We Request our correspondents to send us no more at present *pro* or *con* on the Heddon hive. The subject is occupying too much of our space, and subscribers are complaining of this preponderance. We have now on hand all we can use on that subject for months, and at the same time give the "variety" necessary in a well-conducted periodical.

Everything that will be needed in the apiary should be at once provided, so that when the honey-flow comes there may not be any damaging delays in procuring it. Three years ago every supply dealer in the country was so crowded with orders that hives, comb foundation, sections, etc., could not be made fast enough to supply the many orders that were rushed in all at once. The wise ones will "learn by experience," and order such before the rush comes—for come it will. A word to the wise is sufficient.

The Birds are Here—harbingers of delightful spring. The weather has been so mild and pleasant during the past week, that we feel as though spring had actually come. We may have to pay for it by later storms and cold, but we may as well take all the comfort that can be obtained from the present. The bees have wintered well, and that is encouraging; for if they have "wintered" well, they will "Spring" safely. The robins and bluebirds are already here, and "the flowers that bloom in the Spring" will soon be spreading their sweet perfume on the air; all nature having cast off her garments of snow and ice, will revivify and the earth will bring forth her generous fruit for man's use and pleasure.

The grassy carpet will be enriched with flowers of gorgeous hues; the trees and shrubs will blossom and bear fruit, and the earth will yield her increase—spreading man's pathway with flowers, and his table with plenty.

The bees wintered on the summer stands are already sporting in the genial sunshine, and enjoying that health-giving exercise. All our reports state that they are in excellent condition, both in the cellars and out-of-doors, and everything promises a good year for honey-production. The white clover was not damaged (as was feared by some), and appears quite healthy. We may now take courage and hope for prosperity. The bees are already working on the maples in this vicinity.

A New Uncapping-Knife has been invented in Italy. The following description of it and the manner of operating it, is thus given by Mr. Arthur Todd, in the *American Apiculturist:*

During the recent meeting of the Italian bee-keepers at Milan, a machine was exhibited which Monsieur Bertrand (of the Swiss *Bee Journal*) considers an absolute novelty.

This was an automatic uncapping-knife invented by Count Zorzi. It is composed of a blade mounted on a pivot and put in motion horizontally by a cog-wheel arrangement moved by a handle. To uncap the combs, they are placed up against the blade, so that as it moves it uncaps.

The jury tested its merits in action, and awarded it a gold medal, and stated that it worked well and was capable of doing good service. To large producers of honey who do not hesitate to spend money to buy time and labor-saving machinery this may be of importance.

Mr. Tartuferi, the owner of 1,000 colonies, and the largest honey-producer in Italy, expressed himself as greatly pleased at its workings.

Those who have Bees, Queens or Supplies to sell should *at once* make it known in our advertising columns. Look out for a good trade, and an early one, too. Those who advertise will do the business—others will look on, be discouraged, and *keep* their stock. Our columns are open to all honorable dealers, and should be used liberally. Advertisements may be inserted weekly, alternate weeks, or once a month, as may be desired. See "Rates" on first page.

Golden Rules for successful advertising, are these: 1. Attractive display. 2. Salient points clearly stated. 3. Repetition. Don't spend all your money in one insertion. 4. Choice of the Paper which reaches the people you want to reach. *These rules never fail.*

Mr. J. M. Shuck, of Des Moines, Iowa, has sent us one of his Invertible Hives, with surplus section case, a feeder of the full size of the top of the hive, and also another of large size for feeding on the bottom-board under the brood-chamber. The hive shows an astonishing amount of ingenuity and inventive genius. It also has a "lifter" for inverting the hives, only one of these being necessary for each operator in an apiary. With it, the inverting of a hive may be done with ease, and so gently that the bees will hardly discover that their house is being handled. Mr. Shuck writes us as follows concerning the hive:

"I ship you one of my hives, etc., for your inspection. I think you will find more practical invention about it than in any thing in its line that you ever saw in your life. It conforms to the principles of hives as established by Mr. Langstroth, and yet is different from his hive in the fact that it can be used in four different positions instead of one."

Sure enough, there are so many points of practical invention about the hive that we cannot here describe them. Those who desire to know any further particulars should send to the inventor for his descriptive circular, where it is fully described and illustrated.

New Price-Lists have been received from the following persons:

L. J. Tripp, Kalamazoo, Mich.—6 pages—Bees, Queens, and Supplies.

W. S. Pouder, Grocsbeck, O.—1 page—Italian Queens.

Chas. D. Duvall, Spencerville, Md.—12 pages—Bees and Queens.

H. F. Moeller Mfg. C., Davenport, Iowa.—28 pages—Bee-Supplies.

F. Boomhower, Gallupville, N. Y.—12 pages—Bees, Queens, and English Rabbits.

E. S. Hildemann, Ashippun, Wis.—4 pages—Apiarian Supplies.

W. W. Bliss, Duarte, Calif.—16 pages—Supplies for the Apiary.

Shute & Bemont, Meriden, Conn.—4 pages—Poultry.

D. H. Bausman, Lancaster, Pa.—24 pages—Wind Engines.

Dougherty & Wiley, Indianapolis, Ind.—8 pages—Bees and Bee-Keepers' Supplies.

H. U. Ackerman, Indianapolis, Ind.—20 pages—Seeds, Household Conveniences, etc.

G. K. Hubbard, La Grange, Ind.—56 pages—Hubbard Bee-Hive, Supplies, etc. To this is added 30 pages devoted to the "first principles in progressive bee-culture." Price 10 cents, and well-worth it to any beginner.

Aspinwall & Treadwell, Barrytown, N.Y.—32 pages—Bees and Bee-keepers' Supplies.

Martin & Macy, North Manchester, Ind.—20 pages—Queens, Bees, Poultry and Apiarian Supplies.

B. F. Nysewander, New Carlisle, O.—32 pages—Bee-keepers' Memoranda and Catalogue of Supplies. Price 10 cents.

Any one desiring a copy of either of them, can obtain it by sending a postal card to the address as given above.

Frank Leslie's Popular Monthly for March comes with its usual variety of readable and valuable articles, attractive stories, and well-executed illustrations. Is the Panama Canal a failure? many ask. The question is answered by Mr. Arthur V. Abbott in "Progress at Panama." The well-known naturalist, C. F. Holder, in his "Wooing of the Birds," describes and illustrates some of the strange performances of the feathered gallants when they seek brides in the spring-time. Altogether it is a most enjoyable number.

QUERIES

WITH

REPLIES by Prominent Apiarists.

"Red Clover" Italian Bees.

Query, No. 221.—Is there any great difference in Italian bees as regards their working on red clover—enough at least to justify one in buying queens for that strain of bees?—W. M.

Hardly.—G. M. DOOLITTLE.

The difference is more imaginary than real. A "red clover" strain of bees is all "bosh."—J. P. H. BROWN.

I do not know, but as "red clover" queens cost little if any more, the trial of them is certainly not objectionable.—W. Z. HUTCHINSON.

It is so reported. If you contemplate buying "red clover" queens, have the party selling such send you a sample of his bees, and test for length of tongue with the Italians that you have.—H. D. CUTTING.

I have my doubts about it. No bee can reach the bottom of the clover tube. These latter may be so full of honey that any kind of bees can reach the nectar. Italians could get more of it than the blacks, and could reach it sooner. It may be that some Italians do better than others.—A. J. COOK.

Spring Feeding of Bees.

Query, No. 222.—Describe the best manner of spring feeding in order to hasten breeding. Also, what is the best and cheapest feeder for early spring feeding? Should not the vessel be small, and directly over the cluster?—Mich.

Fill a brood-comb with feed and place it next to the cluster. No feeder can be cheaper; for you have empty combs on hand, so the cost is nothing.—C. C. MILLER.

As before stated, I do not believe in the practice. If I did, I should use any preferred top-feeder, never any other kind.—JAMES HEDDON.

The division-board feeder is the best and cheapest for early spring feeding. Turn the feed in warm and place the feeder at the side of the brood once a day, but only when bees can safely take wing. It is not best to feed on cool or windy days.—G. L. TINKER.

The best feeder that I have tried for cool weather in the spring, to feed liquid feed, is a very shallow box partitioned off to keep the bees from daubing themselves, and having a tube-like passage away up through its centre. But I believe the most powerful stimulant to early breeding is extracted granulated honey, into which some "oil-cake meal" has been kneaded, made into flat cakes and fed as candy right over the cluster; and, after all, some colonies that have plenty of sealed honey manage to get these first.—G. W. DEMAREE.

I think that some kind of an entrance feeder (and there are many kinds) used to stimulate the strong colonies, and then equalize by drawing from the strong and building up the weak. This method has several good features. Some very practical bee-keepers feed in the open air.—H. R. BOARDMAN.

The best feeder, like the best hive and best frame, is the one that is liked the best by its owner. If by spring feeding is meant stimulation only, I advise feeding only an ounce or two regularly each night in some feeder that can be brought close down to the cluster in order that it may be kept warm. If because the colony lacks stores, then add a frame or two of honey; if that cannot be done, then feed a large quantity in a large flat feeder that can be set down close to the tops of the frames.—J. E. POND, JR.

Tight Ceilings in Brood-Chambers, etc.

Query, No. 223.—1. Is it advisable, in the spring, to have the ceiling of the brood-chamber tight, so as to keep the inside warm? 2. In a Simplicity hive, how can we prevent bees from opening a current of air by gnawing the ends of the enameled cloth?—An Inquirer.

1. Yes.—G. L. TINKER.

1. Yes. 2. This is a practical question, but after years of experience I hardly feel competent to answer it. I have discarded enameled cloth and have gone back to sheeting.—C. C. MILLER.

1. Decidedly yes. I use newspapers, spreading them two or three in thickness over the quilts, and some board weights over them. 2. If you must prevent this, lay some strips of wood, and fit them down closely at the ends of the cloth. With my square-joint hives the cloth is cut out as large as the outer dimension of the top of the hive, and laps on its edges, so that the upper sectional part of the hive rests on the edges of the cloth, thus securing a close-packed joint.—G. W. DEMAREE.

1. Yes, by all means! Not only to retain the heat but also to create moisture. 2. If any trouble is found from bees gnawing ends of enameled cloth, it can be prevented by binding with tin or tacking it to a thin strip of wood ¼ of an inch thick and 1 inch wide. I cover with enameled cloth and then place a cushion made of 5 or 6 thicknesses of old woolen carpet over all, and have no trouble. Bees will not gnaw much if no light comes through.—J. E. POND, JR.

1. Yes, though this matter is not so vital a one as many suppose, it seems to me. I have seen rousing June colonies that had passed the spring all open at the top of the hive. 2. I could not be induced to use cloths about my hives in the spring, summer or autumn.—JAMES HEDDON.

Fertilization of Queens.

Query, No. 224.—1. Which is the best method to insure a queen's mating purely where there are other races of bees in the vicinity? 2. How far will the queen go from her hive on the "bridal tour?"—Elgin, Texas.

2. She often mates with drones 5 to 7 miles away.—G. M. DOOLITTLE.

1. I know of no sure method. 2. Queens will often cross with black drones distant 4 miles. "Clean out," if possible, the "other races of bees in the vicinity.—J. P. H. BROWN.

1. The best practical method is to rear an abundance of pure drones in the home apiary. 2. I have had queens mated with drones whose hives were 1½ miles away.—W. Z. HUTCHINSON.

1. Rear your queens so early that other drones will not be flying. We secure drones early by stimulative feeding. 2. It is hard to tell, but for some miles, as has been demonstrated.—A. J. COOK.

2. It is reported that queens will mate with drones 5 miles away.—H. D. CUTTING.

1. Rear your drones and queens *early* or *late* in the season. 2. The queen will go probably a mile. We have seen matings of our Italian drones with black queens 3 miles off, when we first bred Italians, in 1865.—DADANT & SON.

Brood-Frame and Section-Case Covers.

Query, No. 225.—What is the best cover for brood-frames and section-cases? The bees cut cloth, quilts, muslin, etc., and sometimes make a terrible mess of them. I use sticks sawed and planed out of lath, mostly for shutting spaces between the frames, and I like them better than anything I have tried, but I would like something better if I could get it. For sections they will not do; and cloths full of holes, and sections smeared with propolis are not agreeable. What is better?—T. M. C.

I use enameled cloth.—G. M. DOOLITTLE.

I like factory-cloth and chaff sacks from October to May, and a board or Heddon honey-board after that.—A. J. COOK.

If you use good cloth *painted*, you will have no trouble. As a matter of course, it does not last forever, but will last several years. When we use sections, we hang them in broad-frames without any division between the stores. If you use the Heddon crate you must use his honey-board also.—DADANT & SON.

I think it the best way to have the tops of the frames or sections a bee-

space below the top of the hive, and cover with a board. I know of no better flexible substance to place directly upon the frames than enameled cloth.—W. Z. HUTCHINSON.

I have used enameled cloth for about ten years with the best of success. The bees very seldom cut a hole in it, and put but little propolis on it, compared to cloth of any kind without the enameled surface. It is cheap, costing 2½ to 3 cents per hive, and I have some in use that have been used for several years.—H. D. CUTTING.

Convention Notices.

☞ The bee-keepers of Manitowoc and adjoining counties will meet at Kiel, Wis., on March 25, 1886, for the purpose of organizing a bee-keepers' association. J. H. ROBERTS.

☞ The Wabash County Bee-Keepers' Association will meet at the Court House in Wabash, Ind., on Wednesday, Apr. 7, 1886, at 10 a.m. All bee-keepers are invited. J. J. MARTIN, *Sec.*

☞ The bee-keepers of Stark and adjoining counties are earnestly requested to meet at Grange Hall (over Farmer's Bank), Canton, O., on Tuesday, Apr. 13, 1886, for the purpose of effecting a permanent organization. MARK THOMSON, *Sec.*

☞ The Southern Illinois Bee-Keepers' Association will hold its 3d annual convention in Teague & Harris's Hall at Duquoin, Ills., on Thursday, Apr. 8, 1886, at 10 a.m. A general invitation is extended. F. H. KENNEDY, *Sec.*

☞ The Illinois Central Bee-Keepers' Association will hold its next meeting at Mt. Sterling, Ills., on Tuesday and Wednesday, Oct. 19 and 20, 1886.

J. M. HAMBAUGH, *Sec.*

☞ The semi-annual meeting of the Western Bee-Keepers' Association will be held in Kansas City, Mo., on Apr. 29 and 30, 1886. It is desired that this meeting shall be better than any of its predecessors. Essays will be read on the leading subjects in bee-culture, which will be announced as soon as arrangements are completed. Let all who have bees, queens, fixtures, etc., bring them if possible. Due notice will be given in regard to a hall. P. BALDWIN, *Sec.*

☞ The Union Bee-Keepers' Association of Western Iowa will meet in Dexter, Iowa, on April 10, 1886, at 10 a.m. M. E. DARBY, *Sec.*

☞ A cordial invitation is extended to all to attend the 8th annual meeting of the Texas State Bee-Keepers' Association, to be held at Judge W. H. Andrews' bee-farm, at McKinney, Tex., on May 5 and 6, 1886. Indications for a grand meeting grow brighter every day, and every effort will be made to render this meeting the best and largest ever held in the State. No hotel bills to pay.

B. F. CARROLL, *Sec.*

Honey as Food and Medicine.

☞ To create Honey Markets in every village, town and city, wide-awake honey producers should get the Leaflets "Why Eat Honey" (only 50 cents per 100), or else the pamphlets on "Honey as Food and Medicine," and scatter them plentifully, and the result will be a DEMAND for all of their crops at remunerative prices. "Honey as Food and Medicine" are sold at the following prices:

Single copy, 5 cts.; per doz., 40 cts.; per hundred, $2.50. Five hundred will be sent postpaid for $10.00; or 1,000 for $15,00. On orders of 100 or more, we will print, if desired, on the cover-page, "Presented by," etc. (giving the name and address of the bee-keeper who scatters them).

To give away a copy of "Honey as Food and Medicine" to every one who buys a package of honey, will sell almost any quantity of it.

Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark ⊙ indicates that the apiarist is located near the centre of the State named: ♂ north of the centre; ♀ south; ⊶ east; ⊷ west; and this ♂ northeast; ⊷ northwest; ⊶ southeast; and ♀ southwest of the centre of the State mentioned.

For the American Bee Journal.

"Differential Diagnosis."

N. W. M'LAIN.

Perhaps the reader may inquire what has happened now, which should furnish occasion for an article with such a ponderous and paralyzing caption. I hasten to disclaim any sinister motive, and proceed at once to locate the responsibility where it properly belongs. Dr. G. L. Tinker is the man, and the occasion was the reply to Query, No. 185, viz: "Are queen's eggs, when first laid, male or female?"

Although the correct answering of the question in the form in which it was probably *intended* to state it, requires correct observation and exact knowledge of the operation of the most subtile influences and delicate organic structures known to the embryologist, an off-hand opinion on the question, as it was stated, seems to have cost the Doctor no effort whatever, for he promptly replies: "Yes, of course they are." And I do not hesitate to deny that his answer can be successfully controverted.

I like to think of our bee-periodicals as fruit-baskets, into which are dropped the product of careful, painstaking and well-directed experiment, patient observation and ripe experience. I have distinct recollection of having found in these fruit-baskets, at intervals during the past three years, some cocoanuts (mark you, not "chestnuts") grown by the aforesaid G. L. Tinker, of "The Wintering Problem" variety," which contained about as much milk and strong meat as any specimens I have had the pleasure of sampling. Apart from the fact that the grain of the fruit seemed a little "coarse," as the horticulturists say, the fruit was to my liking. I suspect that while maturing a little too much "nitrogenous matter" had been taken up into its constitution.

Having been a reader of the various bee-papers for several years, I am quite conversant with the views of many whose names have thus grown familiar; and all will agree, that a very fair presentment of the characteristics of a writer flows from and is outlined by the point of his pen; and that he who habitually reads between the lines, will obtain a view in profile of him who writes. By this means I feel that I have had a long and pleasant acquaintance with many who will perhaps read these lines, but whose faces I have never looked upon, and Dr. Tinker is one among that number.

"But," the Doctor says, "a differential diagnosis" of freshly laid queen's-eggs "would floor" him. Now I submit that it would be inexcusably mean to stand by and see a friend "floored" by a little thing like a queen's egg, especially so when the egg is fresh. With the assurance that the specimens are of recent production, we may proceed to inquire what differential principle is revealed by a diagnosis of queen's eggs. I need not here explain that each egg in the ovaries of the queen is generated from a nascent cell; that all eggs when they leave the ovaries are unfecundated, and possess the innate power of producing drones only; that after fecundation the queen may generate two genders; that fluxion of male and female elements produce the female; that sex is determined by the volition of the queen; that the eggs intended to produce drones pass directly from the ovaries through the oviduct to the ovipositor; that those eggs intended to produce females, are, when leaving the ovaries, diverted by volition of the queen, and directed into the fertilizing sack, and that while passing through the folds of this sack, the differentiating, the sex-determining principle is introduced; after which the fecundated eggs pass on through the oviduct to the ovipositor. I have not been able to discover any difference in the shape and superficial appearance of the eggs, whether fecundated or unfecundated. The egg of a queen-bee, as seen through the microscope, is a most delicately constructed and beautiful object.

Mr. Frank Cheshire, in the *Journal of the Royal Microscopical Society*, of London, England, so aptly describes the appearance of a queen's egg as seen through the microscope, that the object seems verily present before the eye of the reader. He says: "If an egg be removed from either a worker or drone cell by the wetted point of a camel's-hair pencil, and then microscopically examined in water or glycerine, its surface will be found beautifully netted (the chorion), almost as though a tiny pearl had been covered with what the ladies call 'blonde,' hundreds of the meshes of which are required to coat it completely. Towards one end the netting makes its cells long and narrow and pointing towards a circular spot, just as the cordage of a balloon points toward the upper valve by which the gas is allowed to escape. This circular spot is really an opening called the micropyle, by which the spermatozoon enters and unites its material with the queen-cell, so bringing about fertilization."

"The tiny spermatozoon not only differentiates the entire creature, but communicates unerringly differences of species or mere variety even. The spermatozoa from Cyprian, Italian and English bees are to the most refined microscopical examination iden-

tical, and yet they contain differences which determine almost countless variations in form, color, size, instinct, capability and temper." "That the spermatozoon enters the egg is certain, for it may be found if the latter be carefully examined immediately after deposition." "The head of the spermatozoon is very narrow in order that the micropylar aperature may be passed."

Here, then, within this atom whose presence is revealed to us by the microscope, is latent those subtle yet potent forces, which may have been conserved for months, perhaps for years, awaiting the time and the environment when in complete agreement with the law of its development, it should be called upon to determine, even to the minutest variation, the distinctive characteristics of a new creature. The determination of sex is a matter of choice, a royal prerogative. The limitation of sexual development; the determination of form, function and instinct—reference being had to all female larvæ—is a matter of choice among the workers, the prerogative of intelligence superior to that of the queen. The queen, in the ordinary and normal performance of her function, is simply reproducing ancestral features which must appear in the direct line of hereditary transmission. Every unfecundated egg must produce a male larva, and every fecundated egg must produce a female larva. And here, in these direct lines, her prerogative of sexual differentiation ends.

It is here at this stage where a more subtile differentiating influence manifests itself, modifying larval adaptation and determining structural features radically different and radically divergent in instinct and function. It is indeed very wonderful that the queen should have the power to voluntarily control the sex of her offspring, but the marvel consists not so much in the exercise of that function, as in the singular and unique adaptation of the delicate organs by which the function is performed. That secondary characteristics should now appear, not inherent in ancestral germs, or contributed by ancestral transmission, appears to me far more strange. That this extra differential influence, operating through intelligence or instinct—and the partition between these two appears to be very thin—and in no sense through ancestral transmission, should become persistent, is marvelous beyond satisfactory explanation. We look to the future for explanation of how the same organic being may be made to assume either one of two divergent modifications of structure, instinct and function; and how this specialization for different functions has been made persistent, and from a remote origin transmitted from one generation to another through an anomalous agency.

Every receptive soul is filled with reverence and awe when brought into the presence of stupendous manifestations of power. I have stood upon the shore of the ocean and in the mountain gorge, and on Table Rock; I have seen the rising sun reflected from the snow-capped peaks of the Rockies, and have found myself saying, "How wonderful are thy works!" and yet, I could not help adding: "However, I find everything very like what I had expected." I have looked upon the revelations of the telescope, and have followed the astronomer as he spoke with familiarity of the millions of miles measuring the inter-stellar spaces, and with mathematical accuracy computed the times and seasons in the great design of planetary revolutions; and I have tried to lift up my thoughts to the contemplation of "The Great Designer," whose ways are past finding out. If it be true that the mind is thus filled with admiration and reverence in the presence of the immense and imposing, what shall be the emotions of the receptive soul, when the transcendent grandeur of the minute is disclosed? I have looked upon the revelations of the microscope, and the blood has stopped in its customary courses, and with blanched cheek and downcast eyes, I felt like saying: "Put off thy shoes from off thy feet."

Verily our thoughts should be humbled and our emotions sublimated, whether we contemplate the handiwork of omnipotent power and the sway of immutable law in the creation and ordering of the eccentric solar system, or whether we recognize the presence of that same power and that same law, differently manifested in the unfolding of insect life, and in determining the differentiating conditions, which, with marvelous and delicate precision, establish and perpetuate form, function, and instinct.

"From the drift of a star to the drift of a soul,
The world is all miracle under control;
The butterfly's wing and man's reverent awe,
Alike wear the chain of inscrutable law;
A law that allures us, but ever eludes,
That baffles our groping, but never deludes;
We never can hold it; it holds us secure;
And the wisest in reading shall longest endure;
A Faith-bow of promise, a promise replete—
Forever fulfilling, but never complete;
We chase where it beckons, and gather the gold,
And lo, on before us, new treasures unfold!"

U. S. Apicultural Sta., Aurora, Ill.

For the American Bee Journal.

"Brethren, Please Don't!"

WM. F. CLARKE.

Dr. Miller's article on page 132 of the AMERICAN BEE JOURNAL, in which the above pathetic entreaty occurs, reminds me of an incident which happened many years ago at a Methodist Conference in England. A good brother who lisped, fell asleep during the proceedings, dreamed that the Conference was having a big quarrel, "spoke out in meetin'" and exclaimed, "Peath, brethren, peath!" A member of the Conference, in a fit of sudden anger, replied by asking in stentorian tones, "Who's at war, you sleepy hog?" It was a very coarse and unchristian rejoinder. I wash my hands utterly of the latter part of it, but beg to ask Dr. M., "who's at war?"

In his anxiety to make out a case, I really think the Doctor does me at least *a trifle* of injustice. Now, Brother Miller, did I say any thing at all approaching the words you put into my mouth? "As who should say, 'You just dare to say a word against the Heddon hive.'" I started abruptly with very strong language in commendation of the new hive, and then said, I had not spoken rashly, but was prepared to back up my statements with strong reasons and cogent arguments. I invited "any gladiator" who felt so disposed, to "pick up the gauntlet for a *friendly tilt* over them." A "friendly tilt" observe. Surely, you have no objecto that! I can truly say I never felt more good-natured in my life than when I wrote the paragraph which has excited Dr. M's alarm. I was just brimful of pleasure, "tickled to death" at having found exactly the hive I had been looking for so long.

If Dr. M. suffered from bee-stings as much as I do, he would be able to appreciate my gladness at having a system of manipulation put before me by means of which I can escape opening the hive, except on rare occasions, and do most of my work in the apiary so quickly, that even an Italian would hardly have time to interview me. When people are full of happiness over some piece of rare good fortune, they are no more quarrelsome than a bee is when full of honey.

There is another place in the Doctor's article where I think he gives me a homœopathic dose of injustice. "It is entirely proper for A to say that no other hive but the Heddon should be used, giving reasons for such belief." To be sure, he quotes A, but the connection plainly implies that he means C. Now, I did not take the ground that "no other hive but the Heddon should be used." I said what implied that I meant to use it, and gave the reasons. I am selfish and wicked enough to hope that everybody won't adopt it right away, because I want to make a little at honey production before the thing is overdone, as I am sadly afraid it will be when my theory of hibernation and Mr. Heddon's hive are generally adopted.

In one point I think the worthy Doctor is inconsistent with himself. He sets out by saying he is dreadfully afraid there is "just a speck of a cloud which begins to threaten" the bursting forth of a storm. This feeling came over him, he says, "as I read what points to a controversy over the Heddon hive." Farther on, he says, "When any man puts before the public a new thing, especially if it be patented, that public has the right to discuss it." Well, I started the discussion by laying down a proposition in favor of Mr. Heddon's book and hive. Was that wrong? I didn't want the discussion to be one-sided, and therefore invited all who disagreed with me to "come on" and have a "friendly tilt." I think this is just what the Doctor says the public has a right to do.

I do not know a shade of difference between the meaning of the words

"controversy" and "discussion." I know that controversy is often very hot, especially between rival schools of theology and medicine. I also know that Irishmen sometimes have what they call "a discooshun wid sticks."

Guelph, Ont.

For the American Bee Journal.

Lamp Nursery vs. the Queen-Nursery.

HENRY ALLEY.

On page 120, Mr. W. Z. Hutchinson gave some of the reasons why he used the lamp nursery. Some of the reasons he gave why he uses the "lamp nursery" are just the reasons why I cannot use such a contrivance for hatching queen-cells. Any arrangement that requires attention as often as once in "two hours," will not do for me. How does Mr. H. manage such an apparatus during the night? If the proper temperature is kept up, queens will hatch as readily in the night as in the daytime.

In the early days of my queen-rearing business, I was obliged to watch a "hatching-machine" that required as much attention as the "lamp nursery," and during the season that I was obliged to work the hardest I was deprived of sleep and rest at night in order to save all of the young queens that were about to emerge. Well, I do no watching now-a-days. One day I decided to devise a "queen nursery," and now I can go to bed and get up when I please, as far as hatching queens is concerned.

By the use of the queen-nursery I manage to get along with half the number of nuclei that my queen-rearing business would otherwise require. Each "nursery" of 18 cages is equal to the same number of nuclei hives; if no nursery cages were used, so many more hives would be needed.

I remove a fertile queen from a nucleus, and in 3 days I introduce an infertile one of the proper age to make the mating flight the same day. Sometimes when the weather is unfavorable, I am obliged to introduce virgin queens that are 2 weeks old; but I can do it as well as I can introduce those that have just emerged from the cell. All of my queens are introduced at night, that is, about sunset, by methods that I have given. If the weather is favorable, they are pretty sure to be fertilized the next day. I place the cells in the nursery cages on the day after they are sealed, and before night many of the queens will emerge. After the cells are placed in the nursery, I give no more attention to them until the queens are old enough to make the "marriage" flight.

I never saw one word in print that would indicate that Mr. Hutchinson ever used a "queen-nursery." I rather suspect that he is as much of an old fogy concerning the queen "nursery" as I was regarding the bellows-smoker. After using a tin pipe for 20 years, in which I could burn only tobacco, it was pretty hard to convince me that the "new-fangled" smoker was as good as my old pipe; but when a friend sent me an improved Bingham bellows-smoker, and I had tested it, I found that it was superior to any thing I had used for smoking bees. I would suggest to Mr. Hutchinson that he would have less watching to do and less trouble if he should use some good "queen-nursery" in connection with his "lamp nursery;" have his queen-cells built so that they can be easily and quickly separated, and place them in cages. No queen would then be lost even if a dozen should emerge at one time. Now, Mr. H,. try one of the new "queen-nurseries," and you will not say another word in favor of the "lamp nursery" for rearing queens.

Wenham, Mass.

For the American Bee Journal.

Northeastern Michigan Convention.

The annual address of President R. L. Taylor was as follows:—W. Z. HUTCHINSON, *Sec.*

I congratulate you to-day upon the the strides forward that the vocation to which we are so devoted has made during the year that has lately closed. But few continue to engage in apiculture and attend conventions of bee-keepers who are not deeply interested in all that pertains to the business, so I congratulate you, too, that our vocation is one which our hearts and hands work together with alacrity. Thrice unhappy is he whose heart rebels at the work his hands must do; thrice fortunate is he whose steps, though quick, lag behind the interested rapidity of his soul. Interested as you are in the honey-bee, and coming here as you do to hear, speak and learn about it, I should but weary you were I to devote the time allotted me to any other subject, or to mere generalities upon this subject, so I shall speak specifically of various matters connected with bee-keeping.

THE POLLEN THEORY.—Many, no doubt, are still interested in this theory. Some have decided for or against it; others are still inquiring. My experience in wintering bees during the last winter—the most disastrous of all winters to bee-keepers—is to my mind a striking corroboration of the truth of the pollen theory. I put into the cellar 195 colonies, all deprived of bee-bread by exchanging their combs for empty ones entirely or almost entirely free from that nitrogenous food. So far as I was able to judge after repeated and thorough examination, I had no normal colony but what wintered perfectly; while during the two preceding winters, under apparently more favorable circumstances respecting temperature, my bees that were provided with the ordinary amount of bee-bread and occupying the same cellar, suffered very severely. This is not a demonstration of the truth of the pollen theory, for in apiculture undiscovered circumstances often strikingly alter cases; but has it not a tendency in that direction? It is amusing to witness the asumption and to examine the reasoning of many of the opponents of this theory. They are heard on every hand, declaring with Mr. J. E. Pond, Jr., viz: "As yet, however, this theory has no proof in its favor;" and that "the fact that bees do survive the severest winters with large quantities of pollen left in their hives, and do not survive at times when they have no pollen at all, is positive proof that the theory is not correct."

What is the pollen theory? Do its enemies claim that it teaches that the "leaving of bee-bread in the hive" by a colony of bees is a cause of imperfect wintering? or that it teaches that bees always survive the winter if bee-bread is absent? I had supposed that it was the consumption of bee-bread and not the "leaving of it in the hive" that the believers in the theory think to be injurious, and I do not understand that they deny that colonies perish sometimes by reason of other causes than that of bee-bread eating.

FOUNDATION IN WIRED FRAMES.—There are many experienced apiarists who are still of the opinion that it is not desirable to use foundation in wired frames. I think that such are in a serious error. If it were a mere matter of convenience—of ease in fixing foundation in frames, and of certainty in knowing that it will stay in place invariably when given to strong colonies, I could understand it; for some men like their own way even with uncertainty. But from my experience during the last season with 185 colonies in which I had in use several hundred combs made from foundation used without wires, along side of those made from foundation on wires, I declare that there is a far more important point involved than mere convenience. It is a question of strength of colonies, and so of success or failure. I believe that the time is near when every intelligent apiarist who uses foundation for brood-combs will use it in wired frames. There is not one comb in a hundred drawn out in strong colonies from foundation fastened into unwired frames in which the cells are not more or less enlarged by the stretching of the foundation; and this will be found true without reference to the quality of the wax used, or to the manner in which the foundation is made, or to the machine used in making it. Wax will stretch under the heat and weight of a strong colony unless it is strengthened in some way or made heavier than it ought to be. I found in examining hive after hive repeatedly, that the queen occupied such combs with extreme reluctance even when placed in the middle of the brood-nest, and under compulsion she would fill only about one-half of the comb with eggs; while wired frames, standing next to them, had brood up to the top-bar.

HOUSE APIARIES.—During the past fall I built a honey-house and a bee-cellar which, so far, have proved very satisfactory. Some may be sufficiently interested to know how they are made. The house is 30 feet square,

with 12-foot posts, and is built against the east end of my barn, which has also a cellar under it. The new cellar is divided east and west through the middle, and the north half is the part I use for bees. In the west end of it is a cistern 5½x15 feet, and a door in the east end opening directly into the apiary. The ground slopes considerably to the east, which gives an easy passage without any steps or stairs, and at the same time enables me to bank the cellar up to the sill on the north and east sides, except where the door is. I consider the position of the cellar on the northeast corner—taking the two buildings as one—a great advantage. It is thus protected both from the prevailing cold winds of winter and from the heat of the sun in the early spring.

I have in this cellar 219 colonies, and the mercury has stood almost continually at 45½° to 46°, Fahr. Continued extreme weather will cause it to vary a little, but not much. I now think that it would have been as well to have put 300 colonies into it. The building itself is divided nearly through the middle into a shop and honey-room. The shop is of sufficient size to accommodate a horse-power and saw-table. The floor and all the walls are filled with sawdust, as is also the ceiling of the honey-room. There is, too, tarred paper in all the outside walls. The windows are hung on pivots at the middle of the side-rails of the sash, thus making it easy to let out any bees that may be brought in with cases of honey. Above is a large, well-lighted room for storing, etc. The doors are all bee-proof. The chimney is built from the bottom of the cellar, and in it is a galvanized smoke-flue fitted to receive pipes from stoves in the honey-room. Within the chimney and outside this flue is ample space for ventilation, and provides the best conditions for securing that object, which can be taken advantage of when thought necessary by means of the ventilators placed in the chimney, one near the bottom and one near the top of the cellar.

CELLAR TEMPERATURE FOR BEES.—The discussion at the Detroit Convention, last December, indicates that a great change is taking place in the opinions of prominent bee-keepers with regard to the best cellar temperature for wintering bees. It appears that several bee-keepers have wintered bees very successfully in cellars where the temperature was much above what has hitherto been thought best—sometimes running up even to 90° and 100°, Fahr.; and it seemed to be the general sentiment that it would be better to raise the temperature of our cellars to about 55°, Fahr. Since in bee-culture, circumstances are so likely to alter cases, I should raise the temperature of my cellar very gradually.

SECTIONAL BROOD-CHAMBERS.—Two events of the past year in apiculture demand some attention. They are, the publication of the book, "Success in Bee-Culture," by Mr. James Heddon, and his "new hive." The hive, in its important features, is, I believe, entirely original. Against its originality even Mr. A. I. Root can only say that years ago he thought of making a hive somewhat on this principle; but his hive was to have no frames—simply slats nailed across to hold the combs.

It was at least 30 years ago, when I was but a lad, that my father put me to making bee-hives, for he used to keep a few bees, and I was the mechanic of the family. He gave me an old hammer and an older saw, whose condition was worse than even its age would indicate, and some rough lumber one foot wide. Under his directions I made each hive by cutting four boards about two feet long, nailing them together into a long box without top or bottom, and then sawing it into three equal boxes. I then with saw and jack-knife cut out notches in the top of each part and put slats across. These three sections were to be placed one above another, and to be interchangeable. I suppose when the top one was found full of honey, the honey was to be cut out and the empty one put under the others. I do not remember of helping to cut out any honey. The bees disappeared; it was during the time of those renowned winters when bees never had the diarrhea. But remember, I claim priority over Mr. Root.

But let us return: The brood-chamber of Mr. Heddon's hive (or perhaps I should say a single section of it) holds eight frames of the capacity of five Langstroth frames. For a brood-chamber, one, two or more of these can be used. They are interchangeable, reversible together or separately, and you could not fail to get refractory bees into the sections for comb honey by putting them between the two parts of the brood-chamber, using a queen-excluding honey-board to confine the queen to one of the parts. There are several other advantages to be derived from it, as it seems to me, on account of its susceptibility to manipulation, and every change can be made off-hand and without handling a single comb. I have faith in the hive. Look out for a revolution!

The book is also new—made on a new plan. It has kept largely out of the fields occupied by other works on apiculture. It has sought pastures new. It has been prepared for the use of the specialist, and the author never loses sight of practical advantages to be gained from every operation. Indeed it is a direct answer to the question, "How can the greatest pecuniary success in apiculture be attained?" and the answer is made full and complete by entering into all the details of practical work. No bee-keeper can afford to be without it.

Lapeer, Mich.

Read at the Indiana Convention.

Cause of Loss in Winter.

CHAS. F. MUTH.

The "pollen theory" was brought up, I believe, by Mr. James Heddon, and has had an abundance of discussion in connection with wintering bees. The best bee-keepers differ widely in this matter, and the problem seems still unsolved. The causes of bee-diarrhea are very likely the same, but appear different because looked at by different persons and under different surrounding circumstances.

Pollen is a nitrogenous food and wholesome; without it the existence of the bee would be an impossibility. The larvæ derive from it their body; and it is essential to animal growth. Pollen preserves for years its nutritious qualities, if kept dry, but it sours in a damp place, like other farinaceous matter, and swells over the brim of the cells. In such condition it has lost its wholesomeness, and is not any more the pollen we were talking about. Bees will get sick if they are obliged to use it. About the same can be said of honey. It will keep forever in a dry place, even in open vessels, and exposed to the sun; but it will sour in a damp cellar, and the tendency to sour will increase with the height of the temperature. Sugar syrup will sour in a warm place which need not be damp. Many reports, from a number of bee-keepers, stating that sugar syrup would not save the lives of their bees, sustain my argument.

There are several points which we should remember when preparing our bees for winter, viz: Bees can create a great amount of heat when in a cluster and well supplied with healthy food. The next is that their exhalations condense into water when the outside air is colder than the temperature of their hive. The moisture will increase with the falling of the temperature, and if it cannot escape as fast as created, the combs and the insides of the hive will become moldy, and their honey and pollen turn sour—become decomposed. I do not think any one has yet seen a colony of bees that died with the diarrhea without moldy combs and sour honey in those parts upon which they clustered.

Perhaps most of us remember the box-hives without a bottom-board, and each corner standing on a pebble or a block an inch or two above a plank. Moldy combs and diarrhea were unknown to the bees of those fortunate bee-keepers, and if a loss in winter occurred, it was a case of starvation every time. Those ignoramuses had accidentally an advantage over us scientifics. Let us make a note of it.

If you want moldy combs and your bees to have the diarrhea during winter, cover the hive up tightly and contract the entrance to about an inch or less. The severer the winter the more the bees will be affected. Try it, and if you lose most of your bees by diarrhea, take any scape-goat you please, but do not blame the pollen nor the fall honey. If you want bees to winter well, confine them to their brood-chamber and let each colony have plenty of honey. Fall honey is as wholesome as the best clover, and it makes no difference whether the most of it is capped or uncapped; nor is there any difference as to the amount of pollen that is left for them.

Have the hive-entrance wide open, and place in the upper story, on the covers of the brood-chamber, a straw-mat or its equivalent. These covers are generally composed of three boards, so-called "third covers." If they fit together very tightly, I should bore an inch hole in one of them, which will admit of the necessary upward ventilation, while the straw-mat on top prevents a draft and keeps off the cold. There will be no moldy combs and no diarrhea. Try it; and if you fail, by this method, to winter your bees as well as did the box-hive bee-men of old, let us know it.

I have recently both read and heard some fine arguments on the pollen and wintering theories, apparently based upon scientific principles, but they could not withstand the solid matter-of-fact arguments brought to bear against them at the Detroit Convention. Unless substantiated by facts the most plausible theories must be discarded. Bee-men in the North winter their bees in cellars—in dry cellars, and in damp cellars; have their bees bred up so that when they put them out in April or May their colonies have not only brood in 7, 8 or 9 frames, but 7, 8 or 9 frames *full* of brood—almost ready to swarm. The veracity of each of these men need not be doubted. The one with a dry cellar maintains in it a temperature not above 45° to 50°; while the damp-cellar winterer runs the temperature as high as 50° to 90°. Pollen is consumed, or brood could not be reared, but no diarrhea develops.

Neither pollen nor honey is the cause of bee-diarrhea, to the best of my observation; but cause either of them to be decomposed, then it will act like poison, the same as moldy corn would affect your stock, or decomposed meat the human family.

For the American Bee Journal.

Prevention of After-Swarms.

R. DART.

There are two ways by which I prevent most of the second or after-swarming. I place my new colony on the old stand, setting the old hive to one side. At the time, or the next day, I place the old hive on a new stand, fronting the hive to the north, and shading it from the sun.

My other way of handling is to draw the frames from the old colony, and shake most of the young bees from the combs in front of the new colony, leaving bees enough in the old hive to nurse the young brood. I carry the old hive to a new stand. This way of handling makes more work, but one will get no second swarms from hives handled in this way; the old colonies get strong very quickly, and are soon at work in the sections. I use three swarm-catchers for my 60 colonies. If I have a second swarm I let it run into the swarm-catcher and leave it there over night. Next day I run them back to the old colony, taking away the young queen as they run in. All the other young queens left in the old hive were disposed of on the previous night.

I do not have to climb trees, cut off limbs, scrape swarms off the bodies of trees, and get my bees cross. I have used swarm-catchers for 6 years out of the 30 years I have kept bees, and they save over one-half of the work in the swarming season.

Ripon, Wis.

For the American Bee Journal.

Horizontal, Divisible Brood-Chambers.

E. KRETCHMER.

Finding that much of the BEE JOURNAL is occupied with comments on a horizontal, divisible brood-chamber for bee-hives; and seeing some of them, at this late day, headed "An Original Invention," I beg permission to add a few scraps of history.

In *Knauff's Bienen-Zucht*, published over fifty years ago, I find directions for constructing and using such brood-chambers; the several parts were made as follows: A sectional chamber was constructed of braided straw, 16 inches in diameter, and 8 inches deep, top and bottom consisting of slats to which the combs were attached; three of such sections constituted a hive. The upper section was designed for the surplus honey, whilst the lower two sections constituted the brood-chamber. In the directions for using, the author directs prior to swarming to equalize the amount of brood in the two chambers by placing the upper brood-section at the bottom, or exchanging the position of the two sections, and when equalized to make artificial swarms by removing one section, bees and all, and place an empty section under each full one.

Later, under date of July 23, 1867, Letters patent No. 67,123 contains a drawing of a horizontally divided brood-chamber. A few extracts from the specifications may give more light: "In providing a horizontal bee-passage through all the combs." (This is the space between the lower and upper tier.) Next follows the description of the bottom arrangement, on which are placed the brood-chambers described as follows: "The lower body of the hive is a square box; upon this box I set another similar box....The interior of these boxes I provide with movable brood-frames *R*, arranged side by side, consisting of two vertical pieces *M*, top-bar *K*, and bar *O*.... The vertical pieces *M* are made wide enough to have the edges of the several frames to touch each other....Between the sides of the case I insert a wedge-shaped piece of lath for the purpose of closing the crevices between the frames."

This hive was then called "Kretchmer's *alternating* hive," and consisted of three equal chambers, each about 8 inches deep, the two lower chambers were used for brood, the upper for surplus honey. In those days, in the absence of comb foundation, we frequently placed the surplus chamber *under* the brood until a *start* of combs were made, then placed it on top, at the same time the two brood-chambers were alternated, that is, the upper chamber was placed on the bottom, and the bottom chamber under the surplus honey receptacle. By this alternating process the centre of the brood-nest was brought next to the surplus chamber, which caused the bees to enter and begin work in said surplus chamber more readily than otherwise; the honey, if any in the brood-chamber, now in the lower chamber, was usually removed and placed in the surplus chamber; for artificial swarming the brood in the two chambers were equalized by a frequent alternating, and then the new colony was made by simply removing one chamber, bees and all, and placing an empty chamber under it; for wintering, both chambers were used, and the space between the two furnished an excellent passage from comb to comb.

The question may now arise, why did we not continue to manufacture this hive? I answer: 1. These shallow frames were denounced by most bee-keepers; many, no doubt, remember the assaults made on the Langstroth frame, which was nearly 2 inches deeper. 2. Central bars in frames, and with it the bars and space in my alternative hive were objected to as occupying space that should be occupied by brood. 3. This hive costs about one dollar more than a hive with a single chamber, which we were thus manufacturing.

This has not been written in the interest of any patent. This invention is, and has been for years public property, and if Mr. Heddon encounters as many difficulties in introducing his hive as I did 18 years ago, he will dearly earn the small amount he asks over the cost of manufacturing.

In conclusion let me say I have made and used hundreds of these hives, and from actual experience can say that this hive possesses points of excellence not found in any hive, and if the surplus chamber is made of the same size as one of the brood-chambers, it is the simplest form of a hive, and my advice to all is, give it a fair trial before denouncing it on theoretical impression.

Coburgh, Iowa, Feb. 26, 1886.

Local Convention Directory.

1886. *Time and place of Meeting.*

Apr. 6.—Eastern Indiana, at Richmond, Ind.
M. G. Reynolds, Sec., Williamsburg, Ind.

Apr. 7.—Wabash County, at Wabash, Ind.
J. J. Martin, Sec., N. Manchester, Ind.

Apr. 8.—Southern Illinois, at Duquoin, Ills.
F. H. Kennedy, Sec., Duquoin, Ills.

Apr. 10.—Union, at Dexter, Iowa.
M. E. Darby, Sec., Dexter, Iowa.

Apr. 27.—Des Moines County, at Burlington, Iowa.
Jno. Nau, Sec., Middletown, Iowa.

Apr. 29, 30.—Western, at Kansas City, Mo.
P. Baldwin, Sec., Independence, Mo.

May 5, 6.—Texas State, at McKinney, Tex.
B. F. Carroll, Sec., Dresden, Tex.

Oct. 19, 20.—Illinois Central, at Mt. Sterling, Ills.
J. M. Hambaugh, Sec., Spring, Ills.

☞ **In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.**

SELECTIONS FROM OUR LETTER-BOX

Bees have Wintered Well.—F. H. Kennedy, Duquoin, ♀ Ills., writes:

The bees have wintered well here, and the outlook for the season of 1886 is very encouraging. We think that honey is cheap, but I find sale for all I have to dispose of at 10 cents per pound.

Gone.—B. B. Tony, Holly Tree, ♂ Ala., on March 12, 1886, writes:

Our brother, Nelson Perkins, late of Minnesota, is no more. He was laid away yesterday; his last resting place being but a few hundred yards from the place where he first settled. We miss him in the bee-fraternity. We and our children and all his acquaintances miss his good counsels. Also the M. E. Church has lost a brother of undoubted Christian influence. Still we hope his good influence is not lost, but will remain with all who knew him. He is now free from his pains forever—gone over the river—and is waiting for his friends.

Home Market for Extracted Honey.—I. N. Arnold, Richmond, ○ Iowa, on March 10, 1886, writes:

I see so often in the BEE JOURNAL complaints about a home market for extracted honey. I will give my experience which might be of some benefit to bee-keepers who have a poor home trade. When I first had extracted honey I took a sample of it and a copy of the BEE JOURNAL to our county-seat and the other smaller towns. I showed the honey, and the picture of the extractor and honey-knife in the BEE JOURNAL, and explained how it was extracted, and told what an advantage it was to the bees to return the combs to them; also telling how it had been proven to take from 14 to 20 pounds of honey to make a pound of comb. I tell them it was as fine comb honey as ever was made, before it was uncapped and extracted. When I can get a man to taste my honey and listen to me, if he has a spare dollar I am sure to sell him a bucket of honey. If he buys once I never have any trouble to sell him honey the second time. I sold 2,000 pounds of extracted honey, and had 1,000 pounds of white clover and linden honey in two-pound sections. I sold the 2,000 pounds of extracted honey, and had three-fourths of the honey in sections on hand; so I told my customers that I had a fine lot of comb honey which I would sell to them at 14 cents a pound. (I had sold my extracted honey at 10 cents per pound.) Some of them told me they did not want to pay 4 cents a pound to chew beeswax. If I would have depended upon the middlemen or grocerymen working up an extracted honey-trade for me, I am sure I would not have a trade for 1,000 pounds a year, where I have a home trade for 8,000 or 10,000 pounds a year.

Feeding Bees, etc.—E. H. C., Mattsville, ♀ Ind., propounds the following queries:

1. How can I tell whether or not my bees are needing feed? I dislike to open the hives in cool weather. 2. Will elm, soft maple and sycamore lumber warp if cured in the shade, and then used for making hives?

[1. Without seeing the contents of the hive you cannot, with certainty, determine the quantity of honey it contains. You can *guess* of the amount of honey better than any one not there.

2. That is the tendency of those woods, when compared with pine and whitewood (tulip or yellow poplar). Both of these are good, and have merits peculiar to themselves, but many prefer the whitewood.—ED.]

The Season of 1885.—T. C. Wire, Grinnell, ⊙ Iowa, on March 8, 1886, writes:

I commenced the season of 1885 with 15 colonies, increased them to 44, and obtained 600 pounds of comb honey in one-pound sections. Bees did very well until the grasshoppers came and robbed the clover of its sweetness. While the grasshoppers were so thick the bees did not gather enough to live on. We had a cold rain that destroyed a good many of the grasshoppers, and the bees worked for 2 or 3 weeks as only bees can; then the frost put an end to honey-gathering. I took off the honey-racks and found 11 late swarms with but very little honey, so I made a feeder that I could use without disturbing the bees. As I had nothing to feed them but white comb-honey worth 15 cents per pound, I bought granulated sugar and fed enough to last them through the winter. I examined them last week and they were all right and strong. I winter my bees in a shed open to the south, with a tight roof, double back and ends, and filled with leaves. I place the hives 4 inches from the ground, 4 inches apart, and 4 inches from the wall, and pack them with dry sawdust. I put a board in front of the hives and tuck around and over it with old carpet, and leave the tops of the hives exposed to the sun. I use chaff cushions in the caps. When the weather is warm enough I turn down the board at the entrances and let the bees fly, and take a hooked wire and help them clean house. They have kept very dry.

Bee-Culture in Maine.—J. B. Mason, Mechanic Falls, ♀ Me., writes:

Ten years ago but very little was done in bee-culture in Maine. While it is true that there were a few bee-keepers who showed a little interest by trying some of the improved hives, one could see nothing throughout the State but a few rough box-hives in some back place, or half hidden by a stone wall or fence. So little honey was produced that it was very seldom seen in the market, and when it was brought to market it was in rough, unsightly packages. Now, honey can be found in nearly all our markets, and put up in as nice shape as anywhere in our country; and nowhere in the world can a nicer quality of honey be produced. Maine can boast of hundreds of apiaries of from 2 or 3 colonies to hundreds, neatly arranged with movable frame hives all painted nicely, and all the improved implements that are now used in bee-keeping in any State are now used here. Tons of comb foundation are used, and tons of honey produced. There are several persons in the State who now devote their entire time to the business. For statistics the reader is referred to an article on page 104.

Selling Adulterated Honey.—13—J. W. Bittenbender, (40), Knoxville, ♀ Iowa, writes:

It seems that since bee-keepers have made such progress in producing comb and extracted honey some people cannot or will not believe that honey can be sold at the present low price without its being adulterated. In these days of enterprise I do not think there can be any one so ignorant in this direction as to write such articles as have been published in certain newspapers. We all are aware that there is a class of men who, when they see others prosper in business, become jealous and immediately endeavor to devise some way by which to injure them. When I first began in the bee-business I had to contend with just such persons who tried to injure my business by making false statements about me; but I thought that if I have not proved myself more of a man than that people should believe that I had adulterated my honey, why they must just believe it until they learn better. They finally did learn better, and false reports ceased. I trust that all have been honest enough to trust this matter to itself. The proper way is, not to sell a package of honey without the bee-keeper's address upon

it, and if there are any who sell honey, that are not willing that it should bear their names upon it, such should immediately quit the business. I am glad that Rev. West corrected his mistake.

Bees Enjoying Sunday. — E. T. Medearis, Mt. Sterling, Ills., on March 16, 1886, writes:

Sunday, March 15, was the first real spring-like day that we have had, and the bees turned out in full force. Last winter I lost 8 colonies out of 16; they were protected with fodder. For this winter I left them just as they stood in the summer, with nothing around them, and I have lost one. It died before the weather became cold. I will work my bees for comb honey, this year, in one-pound sections for my home market. I can sell more than I will produce, right from my place, 2½ miles from town. Every colony that I have is strong.

When to Ship Bees.—Otto Kleinow, Detroit, Mich., on March 12, 1886, says:

Last autumn I put into winter quarters about 65 colonies of Italian and Cyprian bees, and they seem to winter all right. Some have 2 to 3 frames of brood. They had good cleansing flights several times during the winter, but of course the trying months are March and April. April is generally the most dangerous month for bees, for then they are sure to go out for water and pollen, and the air being chilly, many of them will not return to their hives again. Hence I would advise those who purchase bees, not to have them sent before about April 15, for they may dwindle away.

Two Queens in One Hive.—R. M. Osborn, Kane, Ills., on March 9, 1886, writes:

January was the only month so far this winter that gave us zero weather, six days ranging from 2° to 18° below zero. My bees had flights on five days in December, 2 days in January, 5 days in February, and 1 day in March. My 65 colonies are in splendid condition. I have not lost a colony yet. They are all packed on the summer stands. On Feb. 9 they all had a good flight, when I examined several colonies and they all had young brood in every stage, and eggs. On Oct. 17, 1885, while preparing a certain colony for winter, which contained a pure Syrian queen, I was surprised to find 2 queens, the old queen and her daughter, both on the same comb and on the same side, and both laying eggs within less than 3 inches of each other. It was good luck for me, for the daughter was a beauty, and I just clipped her wings and introduced her into another colony, which was made queenless a few days before by taking off the sections. The queen was on the sections, and I had taken her into the honey-house, but I found her too late. The weather being so cool I did not think that a queen would leave the brood and go above. Some of my neighbor's bees are in poor condition. Mr. E. Armstrong says that his 95 colonies are wintering nicely. The white clover and winter wheat looks promising for a good crop, at this date.

Position of the Hive-Entrance.—F. M. J., of Augusta, Iowa, asks this question:

If, as some claim, the bees are better protected and commence breeding sooner by having the entrance crosswise of the frames, why not have the entrance to the Heddon-Langstroth hive at the side instead of at the end? Bees would not have so far to travel to any part of the hive then.

[No. I have used both ranges of entrances for years. This is one of the theories that I could never verify in practice. But theory also says that the entrances, as you propose, would retard summer ventilation. I want the entrance at the end of the hive, and the combs and the sections to run parallel with the frames below, and all slightly pitched forward. I know that both ways have advantages, but the latter has the most. After a bee spends hours in the field, it "travels" in the hive but a moment. If you throw a pailful of water into a lake, there is then a pailful more than before, but not *practically* so.—JAMES HEDDON.]

Bees Wintered in a Cave.—S. Stephenson, Gladstone, Ills., writes:

I wintered 102 colonies of bees in a cave. It was 5 feet below the surface of the ground; 1 foot above the surface on the edges, and 4 feet in the centre; it was 8x36 feet, and was covered with inch boards, a layer of hay, and about 1 foot of sand. They are mostly in Langstroth hives, and all have natural stores. Some colonies have not lost a half-dozen bees, and none have lost more than a double-handful. I think it is a bad practice to feed sugar syrup; it arouses suspicion in the minds of honey-consumers, and it ought to be stopped.

Bee-Business in Iowa. — I. N. Boyles, Urbanna, Iowa, on March 15, 1886, says:

I have just received the census returns of this State, and thinking that the bee-men of Iowa would like to know the number of colonies in the State, and the number of pounds of honey produced here in 1884, I give them as follows: Total number of colonies, 148,384; pounds of honey, 1,997,931; pounds of wax, 35,064. This report is not very good for Iowa, as it gives only about 13½ pounds of honey per colony. The best county for honey, as reported, is Dubuque county, the number of pounds being 48¼ per colony; and the least number of pounds per colony in any county in the State is that of Tama county, which is only 2¼ pounds. I think there must be some mistake about that county. The following is a report of a few counties, showing the difference in the yield of honey in the same year: Tama county, number of colonies, 12,065, pounds of honey, 27,637; Benton county, number of colonies, 3,378, pounds of honey, 66,550; Monona county, number of colonies, 1,083, pounds of honey, 34,832; and Dubuque county, number of colonies, 1,893, pounds of honey, 91,710.

Bees in Good Condition.—Gardner Boyd, Petrolea, Ont., writes:

I commenced the season of 1885 with 4 weak colonies of bees, increased them to 9, and took 1,000 pounds of extracted honey and 50 pounds of comb honey. I am wintering them on the summer stands in double-walled, sawdust hives, with 3 inches of packing all around them. The bees are in good condition at present. I am well pleased with the BEE JOURNAL. I would not be without it.

Early Birds.—Dr. C. C. Miller, Marengo, Ills., on March 17, 1886, says:

Robins and bluebirds are here, and unless the weather changes bees may be out in a week. So far they seem to be in good condition.

House-Wintering of Bees. — W. Mason, Fillmore, Ind., on March 17, 1886, writes:

My bees have had high times in the past three days, all being in fine condition, except 3 colonies that have dwindled, one being queenless, one having an infertile queen which was left out on the summer stand as a test from that of house wintering; the other seems to be afflicted with diarrhea. My house-wintering proved very satisfactory. The bees consumed but a small amount of honey, only about an average, per colony, of 7 pounds for 3½ months. I have 31 colonies. They carried in rye meal yesterday.

Successful Wintering.—A. Wortman, Seafield, Ind., on March 17, 1886, writes:

My bees had a good flight on March 14 and 15, and all have wintered without the loss of a single colony so far. They appear to be in a healthy condition. I have them nearly all covered with boxes without top or bottom, made about 2 inches larger than the hives, and the space packed with forest leaves, with chaff cushions on top and a wide board to cover the box to keep the rain and snow out. They are protected on the west and north, from the winds, by sheds and high-board fences. The hives are ventilated at the bottom by a hole 4x4 inches square cut in the bottom-board

and covered with wire-screen. They were packed about the last week in October; but they have had a flight every 3 or 4 weeks since they were packed, which I think beneficial, for safe wintering on summer stands.

Good Prospects for 1886.—Frank A. Eaton, Bluffton, O., on March 15, 1886, says:

My bees had a fine flight yesterday and to-day. Those on the summer stands—40 in all—were bringing in pollen. The 100 colonies in the cellar were never in healthier and finer condition at this time of the year. Prospects are good for the bee-business the coming season.

Bees all Right.—Chas. Haas, Lower Salem, O., on March 8, 1886, says:

I have 48 strong colonies of Italian bees in two-story chaff hives, all wintering well so far on the summer stands. They have plenty of stores. I fed each colony $1 worth of sugar last fall. I lost but one colony, whose queen was a drone-layer. We have frequently had nice summer days so the bees would often get a flight. From all appearances we may have a good season for honey this year.

Bees and Flowers.—Prof. A. J. Cook, Agricultural College, Mich., writes:

The interesting article by Mr. Latham, on page 153, contains some points that I think need confirmation. I believe that all botanists now hold that all flowers which are showy or contain nectar, either need insects absolutely or else are materially benefited by the visits of insects. Without doubt this was *always* true. I know of no authority in geology nor any reason to believe that there were showy flowering plants prior to flying insects, or even to sweet-loving insects. In the economy of Nature both were developed together. The one without the other would be like a button-hole and no button. Geology shows conclusively that there were no terrestrial plants until the upper Silurian time, and no true flowering plants until the Cretaceous period, or near the close of the Mesozoic or Middle life time. The only flowering plants before that era were conifers, whose pollen is easily carried by the winds. Even as soon as such flowering plants (the inconspicuous ones) appeared, there were lace-wing and locust-like insects which had good powers of flight; and quite likely fed in some part on pollen. We have positive knowledge that showy flowers, and the secretion of nectar were synchronous in time of appearance with Hymenoptera (bees and wasps) and Lepidoptera (butterflies and moths). This fact is loud in praise of the importance of bees in Nature, and should never be misrepresented, as too much of value depends upon it. Destroy bees, and other sweet-loving insects, and you strike down much of our most valuable vegetation. No point in geology or biology is better sustained.

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At One Dollar a Year.

ALFRED H. NEWMAN,
BUSINESS MANAGER.

Special Notices.

To Correspondents.—It would save us much trouble, if all would be particular to give their P. O. address and name, when writing to this office. We have several letters (some inclosing money) that have no name; many others having no Post-Office, County or State. Also, if you live near one post-office and get your mail at another, be sure to give the address we have on our list.

☞ We take pleasure in calling the attention of our readers to the advertisement of Montgomery Ward & Co., Chicago, which appears in our paper. This is an old and reliable house, and their immense business is but the natural result of the careful and honorable manner in which it is conducted.

Perforated-Zinc.—We have laid in a stock of perforated zinc, for excluding drones and queens, and can fill orders for any size of pieces or quantity at 15 cents per square foot, or in full sheets 3x8 feet at $2.75 per sheet. We also have pieces cut to fit the Langstroth hive—19¾x14½—Price 25 cents each.

Beeswax Wanted.—We are now paying **22** cents per pound for good, average, yellow Beeswax, delivered here. Cash on arrival. Shipments are solicited. The name of the shipper should be put on every package to prevent mistakes.

Our New Catalogue of Bee-Keepers' Supplies for 1886 is issued, and will be sent to any one desiring a copy. Send name and address, plainly written, on a Postal Card for it.

Wire Nails have advanced in price, as will be seen by quotations on page 159, last column.

To any One sending us *one new* subscriber with their own renewal (with $2.00), we will present a copy of the new "Convention History of America."

The Western World Guide and Hand-Book of Useful Information, contains the greatest amount of useful information ever put together in such a cheap form. The printing, paper, and binding are excellent, and the book is well worth a dollar. To any one sending us two *new* subscribers besides their own, with $3, for one year, we will present a copy of this valuable book.

Preserve your papers for reference. If you have no **BINDER** we will mail you one for 75 cents, or you can have one **FREE** if you will send us 4 new yearly subscriptions for the BEE JOURNAL.

Honey and Beeswax Market.

Office of the AMERICAN BEE JOURNAL,
Monday, 10 a. m., Mar. 22, 1886.

The following are the latest quotations for honey and beeswax received up to this hour:

CHICAGO.

HONEY.—Comb scarce. Some 1 lb. sections have brought 17@18c. Extracted, plenty and dull, 6@7c. California comb honey, in 2 lb. frames, 9@12c.
BEESWAX.—22@25c. per lb. Not much offered.
R. A. BURNETT, 161 South Water St.

NEW YORK.

HONEY.—We now quote: Fancy white comb in 1-lb. paper cartons, 13@14c.; the same in 1-lb. glassed or unglassed sections, 12@13c.; the same in 2-lb. glassed sections, 9@10½c., and fair to good in glassed 2-lbs., 8@9c. Fancy buckwheat honey in 1-lb. unglassed sections, 10c.; the same in 2-lb. sections, glassed, 8@9c. Extracted, white, 6½@7½c; buckwheat, 5@6c.
BEESWAX.—27@28c.
McCAUL & HILDRETH BROS., 34 Hudson St.

ST. LOUIS.

HONEY.—Choice comb, 10@12c. Extracted, in barrels, 4½@5c. Extra fancy of bright color and in No. 1 packages, ¼ advance on above prices.
BEESWAX.—Firm at 22½c. for prime.
D. G. TUTT & CO., Commercial St.

CINCINNATI.

HONEY.—Extracted honey brings 4@8c., and choice comb honey brings 12@15c. in a jobbing way.
BEESWAX.—In demand at 22@25c. for yellow.
C. F. MUTH & SON, Freeman & Central Ave.

CLEVELAND.

HONEY.—One pound sections, 14@15c.; 2-lb. 13c Extracted, 7@8c.
BEESWAX.—Scarce at 25c.
A. C. KENDEL, 115 Ontario Street.

KANSAS CITY.

HONEY.—We quote: choice comb, 1-lb. sections, 16c.; fair to dark, 12@14c.; in 2-lb. sections, 12@14 cents. Extracted is dull and slow. Dark brings 3 1-2 to 4c.; white, 6@7c.
BEESWAX.—23c.
CLEMONS, CLOON & CO., cor. 4th & Walnut.

BOSTON.

HONEY.—One-lb. sections, white clover, 13@15c; 2-pound sections, 11@13c. Extracted, 6@8c.
BEESWAX.—25 cts. per lb.
BLAKE & RIPLEY, 57 Chatham Street.

SAN FRANCISCO.

HONEY.—White and ex. white comb, 11½@13c.; dark comb, 6½@8c. White extracted, 5½@5½c.; amber, 4@4½c.; dark and candied, 3½@4c.
BEESWAX.—Quotable at 20@23c., wholesale.
O. B. SMITH & CO., 423 Front Street.

DETROIT.

HONEY.—The market continues dull and very few sales are reported. Best white in 1-lb. sections can be bought at 13 cts. per lb.
BEESWAX.—It is in good demand at 25@27c.
M. H. HUNT., Bell Branch, Mich.

Advertisements.